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ABSTRACT

A study explored the attitude of the first-year university and teacher training college students toward the secondary agriculture program in Swaziland. A questionnaire generated data from 235 first-year college students at the University of Swaziland and 3 teacher training colleges. Findings indicated respondents had a positive attitude toward the secondary agriculture teachers, objectives, and teaching materials and only a slightly positive attitude toward the students. Students at the different institutions held different attitudes toward the teachers, about how people viewed students in agriculture, and about how the media portrayed agriculture and individuals in agriculture-related fields. Students' personal characteristics varied positively but explained little about their attitude toward the secondary agriculture components. Students rated most reasons listed in choosing their program very important. Characteristics that explained attitude toward students were grade level at which students decided to attend college (GL/DAC) and fathers' occupation; those that explained attitude toward objectives were mothers' occupation and GL/DAC; those that explained attitude toward teaching methods were recruitment by someone in present college and mothers' occupation; and those that explained attitude toward teaching materials were mothers' education and hobbies. Recommendations were made regarding teaching methods, improving student attitudes, and further research. (Contains 36 references.) (YLB)

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Summary of Research

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Factors Related to the Attitude of First-year University and College Students Toward the Secondary Agriculture Program in Swaziland

Marietta P. Dlamini and Larry E. Miller

Introduction

In 1971, the Imbokodvo National Movement which was a policy-making body of the Swaziland government, clearly stated that the agriculture sector must be made attractive to school leavers and should have greater emphasis beginning at the primary level. The conceptualization of teaching agriculture as a subject in public schools evolved from an Economic Planning Office meeting in 1972.

Gooday, in 1974, presented the Swaziland Ministry of Education with his observations regarding the failure of agriculture in many schools in African nations. Among those failures Gooday highlighted: no clarity of aims and objectives, qualified teachers were few, lack of or irrelevant instructional materials, inappropriate teaching methods, practical work became a drudgery, agriculture students were not tested, and minimal administrative supervision of the agriculture programs existed.

In 1980, Gooday developed an agriculture model for Swaziland schools. The aspects included in the model were: clear curriculum principles and objectives, curriculum materials, coordinating/supervising team and administrative control, preservice teacher preparation, an examination system, inservice education and a program evaluation system. The purpose of the "Schools' Agriculture" program was to encourage pupils to regard farming as a profitable way of life when properly practiced and to stimulate a positive attitude toward agriculture.

Agriculture was introduced into a public school if these three basic criteria were satisfied: availability of land and water; willingness of the school committee and chief of the area, and willingness of the pupils to take agriculture during the last two years in primary school and the first three years in secondary school. Agriculture during the last two years in high school is an option for students.

Background of the Study

In Swaziland, no specific studies have been targeted on college students' attitude toward agricultural education or agriculture-related fields. Previous studies, however, have presented findings useful in conceptualizing the research problem. Dlamini (1986) studied the perceptions of agricultural education professionals regarding the quality of the agricultural education program in Swaziland and recommended that high school graduates with high interest (positive attitude) in agriculture and teaching should be admitted to the agricultural education program at the university level. He also pointed out that there was a need to study the impact of studying agriculture in the secondary school on students' interest (attitude) in furthering studies in agricultural fields. These recommendations led to two questions. First, what were the characteristics of high school graduates that contributed toward positive interest in agriculture and teaching? Secondly, did studying agriculture in the secondary school encourage students to further their study in an agricultural field at the tertiary level?

The planned use of agricultural subject matter content by graduating senior secondary pupils in Swaziland was studied by Simelane (1988). He concluded that students' work (practical skills in

CE 066 333

agriculture) had not been given appropriate weight in the overall calculation of the final grade. Clearly, the practical skills acquired by the junior secondary school pupils have not been given sufficient credit.

Sukati (1991) identified the desired careers of the Swazi Form III (Grade 10) pupils and found that agricultural careers, were not popular. He asserted that this perception was not realistic as the labor market required manpower in these areas. The negative attitude was attributed to insufficient counseling and guidance. Most of the pupils in the junior secondary level had taken agriculture, practical, and service-geared subjects in school. Did the experience not have a positive influence on considering this course of study at the college or university level? This question focused the problem for this study.

A similar study was conducted by Asante and Dlamini (1989) with high school students. The authors reported that the students aspired for white-collar jobs. A recommendation was made to research further the factors which influence student career choice.

The foremost reason for conducting this study was that a demand existed for qualified teachers in agriculture. Teachers are in short supply for several reasons. One, the Swazi teachers are continually attracted to the neighboring Southern African nations because of higher compensation offers. Furthermore, the teaching and learning of agriculture had always been disadvantageously compared with the teaching of other subjects. Agriculture teachers as well as students often spend more time in the school on a daily basis including the weekends. Lastly, at present, a number of countries in Africa have indicated their interest in knowing more about the Swaziland Schools' Agriculture program (Dlamini, 1992).

Swaziland is perceived to be setting the pace in the field of agricultural education in Africa (Dlamini, 1992). This is also evidenced by a newly-revised collegiate level agricultural education curriculum being implemented in 1992 in the Faculty (College) of Agriculture in the University of Swaziland. The current agricultural education curriculum in Swaziland, as compared to the curricula in the other African nations, has responded to the evolving nature of agricultural employment not only in Swaziland but in the whole of the Southern African region.

The 5th Swaziland National Development Plan (1991/92-1993/94) has continued to strengthen and expand the agriculture program in the schools. The Ministry of Education declared a policy to continue expanding the Schools' Agriculture program (Dlamini, 1992). The ultimate goal was to involve all schools, especially at the secondary school level.

The majority of the teachers in the schools hold a diploma certificate (associate degree). The junior secondary schools are being upgraded to senior secondary schools. This means employment opportunities for teachers with at least a Bachelor's degree to teach the fourth and fifth year high school students.

This study will measure the attitude of university and teacher training college freshmen toward the components of the program. The results of the study can have direct implications for teaching, research, service, curricular content, recruitment, and the overall conduct of the program, especially in the secondary and tertiary institutions. The evaluation of the components of the secondary agriculture could help prioritize the areas that need improvement. The results can guide professional agricultural educators to consider the areas deserving closer examination.

The construct "attitude" had not been studied with regards to the components of the secondary agriculture among Swaziland senior high school students or university/college students. The main reason had been that the Ordinary Level ("O" Level) Modern Agriculture, the senior secondary level agriculture program, increased in enrollment since 1985. A limited number of students from these programs have been admitted to the university and other colleges in the previous years. A trend for an increasing number of first-year students being granted admission to the tertiary institutions has evolved. Among first-year university/college students, the pursuit of a specific tertiary program might indicate the kind of attitude the students possess toward the program pursued or not pursued.

Purpose and Objectives

The purpose of the study was to describe and explain the attitude of the first-year university and teacher training college students toward the secondary level agriculture program in Swaziland. The specific objectives of this study were to:

1. Describe the attitude of the first-year university and teacher training college students toward the components of the secondary agriculture.
2. Determine whether there was a significant difference among the attitude of the students toward the secondary agriculture program by:

institution affiliation; program pursued; department/faculty affiliation; and whether agriculture was or was not considered a subject or course of study.

3. Describe the characteristics of the first-year college students: (1) age, (2) gender, (3) place of residence, (4) fathers' occupation, (5) fathers' education, (6) hectares of land allocated by the chief to the students' family, (7) family earnings from agriculture produce, (8) mothers' occupation, (9) mothers' education, (10) number of years spent in school dormitories, (11) number of months of teaching or teaching-like experiences, (12) students' hobbies, (13) number of youth organizations joined before university/college, (14) number of years in agriculture courses prior to attending a university/college, (15) number of months of paid employment experience, (16) school level at which student decided to pursue present university/college program, (17) age at which students decided to pursue present university/college program, (18) number of times counseled regarding careers while in senior secondary school, (19) whether specifically recruited by someone in the present university/college, and (20) overall number grade in "O" level examination.
4. Determine the relationship among the attitude of students toward the secondary agriculture education program and the previously identified characteristics of the first-year university/college students.
5. Describe the level of importance of the reasons for pursuing the present program and the level of influence of the factors in making the decision to enroll in their present university/college.
6. Identify the predictors of attitude toward the components of secondary agriculture from the first-year university/college students characteristics.
7. Identify the: (1) reasons for choosing the present program that have significant impact on attitude of the first year-university/college students toward the components of secondary agriculture, and (2) elements influencing the decision to enroll in the present university/college which that significant impact on attitude of the first year-university/college students toward the components of secondary agriculture.

Methodology

Population and Sample

The study was descriptive-correlational and a questionnaire was used to generate the data for this study. The potential errors (measurement, sampling, frame, selection, and non-response) in survey research needed to be controlled (Miller, 1993) for a survey to be properly executed and valid.

The registrars in the university and the three teacher training colleges in Swaziland provided the most recent list of the first-year classes and students in the different faculties/colleges or departments. This controlled frame error. The target population of the study was the first-year college students in the university and specified teacher training colleges in Swaziland. The total number of students was 696 and Krejcie and Morgan (1970) recommended a representative sample of 248 drawn from a population of 700. The sampling table by Krejcie and Morgan (1970) is meant for drawing samples from which categorical data are generated (Warmbrod, 1992). Intact classes of students were purposely selected to represent the subsamples satisfying the proportions and number of students required for the subsamples. The use of intact classes made the actual subsample slightly more than or less than the calculated number in each subpopulation. The lists of intact classes and the names of students in each class provided by the registrars for the study were checked to determine if there were classes or names of students represented more than once to control for selection error.

Further cautions on appropriateness of sampling have been taken with the different data analysis procedures. The "rule of thumb" according to Warmbrod (1992) when analyzing data using multiple regression is to have 10 cases for every independent variable investigated. This has implication on sampling and adjusted R^2 and R^2 values results for a regression model. Warmbrod added, the larger the sample size, the more stable is R^2 and the higher the R^2, the less the estimated shrinkage (R^2 change). In this study, the sample was 235 which satisfied the minimum number of cases (235/10=23.5) that can be used for multiple regression analysis for any of the three groups of independent variables labeled factors (characteristics = 20, reasons for choosing the present program = 12, reduced to two factors, and elements that influence the decision to enroll in the present university/college = 21, reduced to three factors).

The study included 235 first-year college students at the University of Swaziland and three teacher training colleges. The institutions referred to in this study were: the (1) University of Swaziland, (2) William Pitcher Teacher Training College, (3) Manzini Teacher Training College, and (4) Ngwane Teacher Training College. The depart-

ments referred to in this study were Faculties or Departments of: (1) Agriculture, (2) Science, (3) Education (the three teacher training colleges in Swaziland), (4) Commerce, (5) Law, and (6) Social Science.

Outcome Measures

A research questionnaire was used so the researcher would have responses to a variety of statements, students' personal characteristics, and program and university/college choice questions. The attitude rating scale employed was developed so the responses could be summed to produce a single score that represented the overall attitude on each of the components.

The research instrument was specifically developed by the researcher for this study. The questionnaire was subdivided into two parts. Part I consisted of subscales A to F with a total of 41 items representing the construct "attitude toward the secondary agriculture components." The secondary agriculture components investigated were the secondary agriculture: teachers, students, program, objectives, teaching methods, teaching materials, and students' perception of how people viewed the agricultural students and how media portrayed agriculture and individuals in agriculture-related fields. Part II was comprised of three sections eliciting factors that might explain students' attitude toward the components: (1) personal characteristics, (2) program choice, and (3) university/college choice information items. The attitude rating scale was a Likert-type with one to eight points, ranging from 1 = Very Strongly Disagree to 8 = Very Strongly Agree.

A selected group of experts in agricultural education checked the content and face validity of the questionnaire. The reliability of the questionnaire was established through a pilot test conducted among a similar group of participants in Swaziland. Internal consistency reliability coefficients were calculated using Cronbach's alpha. The coefficients for the subscales were in the range of .50 to .75 and for the total scale was .90.

Data Collection

The administration of the questionnaire was officially arranged and conducted by the in-country data collector, Dr. M. J. Simelane. Deans of the faculties/colleges or heads of departments in the university and the principals in the involved Swaziland colleges were responsible for questionnaire administration.

A quantity of questionnaires corresponding to the number of students in the intact classes were prepared and labeled prior to administration. This procedure systematized the identification of nonrespondents (absentees). Students not present were requested to complete and submit the questionnaire to the instructor before or after the next lesson time.

The instructors at the three colleges were personally requested to mail Dr. Simelane the absentee questionnaires in a self-addressed and stamped envelope. The instructors at UNISWA were personally asked to send the absentee questionnaires through the inter-campus mail. Nonresponse bias was controlled by ensuring that absentees in each intact class responded to the study.

The research instrument was designed in a booklet fashion. A copy of the validated questionnaire was express mailed by air to the Swaziland in-country data collector for pilot testing in November 1992. The academic adviser of the researcher returned the completed questionnaires in December 1992. A copy of the revised questionnaire was express mailed by air to Swaziland for data collection in January 1993. The completed questionnaires from the three teacher training colleges were returned by an agricultural education professor at the Virginia Polytechnic Institute and State University who was returning from UNISWA to the United States after an official visit. The researcher personally received the first batch of questionnaires collected from the teacher training colleges and the two other batches of questionnaires collected from the University of Swaziland students were express-airmailed through DHL courier carrier in March 1993.

One intact class in the Faculty of Humanities at the University of Swaziland was included in the sample but was not represented in this study. The UNISWA students went on a strike at the time of collecting data from this group.

Data Analysis

The SPSS PC+ statistical package was used to input the data. When data entry was completed, data were subsequently uploaded and analyzed using the Academic Computing Services at The Ohio State University.

The level of measurement for the independent and dependent variable(s) in the objectives were specified. Subsequently, this led to the description of the statistics used when analyzing data. The

collected data were analyzed using measures of central tendency, variability, correlation, clustering and "goodness of fit." An a priori level of .05 was used to test for significant differences among groups and for examining the level of significance of the independent variables in explaining the dependent variable investigated.

Findings

Attitude of Students Toward the Secondary Agriculture Components

The first-year students in the University of Swaziland and the three colleges surveyed revealed positive attitude toward the secondary agriculture teachers. The overall mean rating revealed their attitude to be positive.

A mixed attitude was found among students studying agriculture in the secondary school. The first-year university and college students positively perceived the secondary agriculture students' high aspiration for a college education and the high level of awareness of career opportunities. However, the first-year students in all institutions did not agree that agriculture students were good in science or were generally intelligent. Only a slightly positive attitude toward the agriculture students was found.

The conduct of the secondary agriculture program was evaluated by nine items. Two statements showed students agreed that more work was involved when studying agriculture and that studying agriculture in the secondary school was not too costly.

The attitude toward the secondary agriculture objectives was rated positive by all institutions. Students did not agree, however, that secondary agriculture programs developed students' leadership abilities. All students in the institutions favored the teaching methods used by the secondary agriculture teachers. However, the problem-solving method was not fully used by teachers when teaching.

The students disclosed a positive attitude toward the teaching materials used by secondary agriculture teachers. Students were not convinced that the teaching materials used in learning could be purchased locally.

Students at all institutions agreed that people generally favor students enrolling in agriculture and that the Swaziland radio was doing a good job in informing people about agriculture. Students, however, indicated that Swaziland TV was not doing enough to positively portray people involved in agriculture.

Variability of Students' Attitude Toward the Secondary Agriculture Components

Students at the different institutions held different attitudes toward the secondary agriculture teachers, and how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields. William Pitcher College students reported more positive attitudes toward the teachers, how people viewed students in agriculture, how the media portrayed agriculture, and individuals in agriculture-related fields, than did university students. Ngwane College students also reported more positive attitudes toward how people viewed students in agriculture, how the media portrayed agriculture, and individuals in agriculture-related fields, than did university students. Diploma and bachelor students did not differ significantly in their attitude toward the different components of the secondary agriculture.

The analysis of variance for the different departments showed that students significantly differed in their attitude toward the secondary agriculture teachers, how people viewed students in agriculture, how the media portrayed agriculture, and individuals in agriculture-related fields. Education students more positively favored the secondary agriculture teachers than did agricultural education students. Agricultural education students could be expected to have more positive attitudes toward the profession to which they were aspiring. Education students reported a more positive attitude toward agriculture students than did commerce students.

Analysis of variance by students enrolled and those to enroll in agriculture showed significantly different attitudes toward secondary agriculture students, how people viewed students in agriculture, how the media portrayed agriculture, and individuals in agriculture-related fields. The students who were enrolled or will be enrolling in agriculture as a subject or course of study in the university or college had reported a significantly more positive attitude toward secondary agriculture students, how people viewed students in agriculture, how the media portrayed agriculture, and individuals in agriculture-related fields than those

who were not or will be not be enrolled in agriculture as a subject.

Relationships Among Characteristics of Students and Attitude

The correlational analysis showed primarily negligible to low, positive associations (.01 to .29) among the characteristics and the attitude toward the different components of the secondary agriculture. This finding led to the conclusion that the personal characteristics of the students vary positively but explain little about the attitude they held toward the secondary agriculture components.

Importance of Reasons in Deciding to Pursue a Program of Study

Students rated most of the reasons listed in choosing their program very important. One-half of the list were rated influential while the other one-half were rated uninfluential in the students' decision to go to a college. The five most important reasons students indicated for pursuing their program of study were: opportunities for further training, prospect for employment, high income and pleasant working conditions, service to humanity, and creativity involved in the job. The five most influential reasons students provided for attending their institution in this study were: subjects taken in high school, grades in high school, advice by a professional in the desired field, advice by a career guidance counselor and the reputation of the target department.

Factors Explaining Attitude

Factors were the collective construct for (1) characteristics of the students, (2) reasons for pursuing a program of study, and (3) influences for attending an institution. The attitude toward the different components of the secondary agriculture were regressed with the three factors that might explain attitude toward the different components of the secondary agriculture (characteristics=20 variables treated independently after bivariate correlations revealed no auto correlation; 12 reasons reduced to 2 factors through factor analysis; and, 22 influences reduced to 3 factors through factor analysis).

The R^2 values were used to explain the amount of variance the significant independent variables were accounting for cumulatively. Also, R^2 change values were used to explain the unique amount of variance accounted by each significant variable. The beta weights were used to explain the magnitude and direction of specific significant independent variables in explaining specific dependent variables. Characteristics that significantly explained attitude toward some specified components of the secondary agriculture were highlighted.

Characteristics that explained attitude toward the secondary agriculture students were found to be: grade level at which students decided to attend their present college and students' fathers' occupation. Attitude toward the secondary agriculture students was increasingly positive as the grade level at which students decided to attend their present college became higher (coding: from 1=primary school to 4=just before college), and as students' fathers' occupation became better (coding: from 1=unemployed to 4=white collar employment). The two characteristics significantly explained 21% of the variance in the attitude toward the secondary agriculture students.

When the dependent variable was attitude toward the secondary agriculture objectives, two characteristics were found explaining variance. These were the students' mothers' occupation and the grade level at which students decided to attend their present college. Attitude toward the secondary agriculture objectives was positive and increased favorably as students' mothers' occupation improved and the grade level that students decided to attend their present college became higher. These two variables explained almost one-fifth (18%) of the total variance in the attitude toward the secondary agriculture objectives.

Two characteristics explained a total variance of 25% in the attitude toward the secondary agriculture teaching methods. These were: the indication of whether students were recruited by someone in the present college, and the students' mothers' occupation. Students who were recruited had a very high positive (beta = .90) attitude toward the secondary agriculture teaching methods. As the students' mothers' occupation improved, their attitude was increasingly positive toward the secondary agriculture teaching methods.

Regression analysis with the attitude toward the secondary agriculture teaching materials showed that two characteristics (mothers' education and the indication of whether students' hobbies included agriculture-related activity) were explaining variance. Attitude toward the secondary agriculture teaching materials was positive and became more favorable as the students' mothers' years of

education increased and for students whose hobbies included agriculture. These two characteristics explained 29% of the variance in the attitude toward the secondary agriculture teaching materials.

When the students' perception of how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields was regressed with characteristics of the students; three characteristics (hectares of land allocated by the chief to the students' family, number of youth organizations joined before college and students' residence) were found to explain variance. Attitude on how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields was increasingly positive as the number of hectares of land allocated by the chief to the students' family and as the number of youth organizations joined before college by the students increased. Attitude toward the same component was highly negative (beta = -.60) for students whose residence was urban. The three independent variables significantly explained 39% of the variance in the attitude toward the dependent variable "how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields."

The attitude toward the different components of the secondary agriculture were regressed with grouped reasons for choosing the students' present program of study and the grouped elements influencing the decision to enroll in the students' present institution. This was conducted to determine the relative importance (standardized beta weights) of specified grouped independent variables in explaining specific dependent variable.

"Extrinsic" reasons were found to have significant impact on attitude of students toward the secondary agriculture program. Both "extrinsic" and "intrinsic" reasons had significant impact, in respective order, on attitude toward the secondary agriculture objectives. Only the "extrinsic" reasons significantly impacted attitude toward the secondary agriculture teaching materials.

The element "impression of the institution" had significant impact on attitude toward the secondary agriculture students. Both "advice by professionals" and "impression of institution" significantly impacted attitude toward the secondary agriculture objectives. The "provision and advice by enrolled students and non-agriculture teachers" had a significant impact on students' perception of how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields.

Implications to Knowledge

The finding by Simelane (1988), that secondary agriculture teachers in Swaziland seemed to not be making parents aware of the agricultural knowledge and skills their children were acquiring in school, was not consistent with the findings of this study. Students disagreed that teachers were having difficulty in relating their teaching to students' home situations, and that, overall, they held positive attitude toward the secondary agriculture teachers.

Regan and Thompson (1965) found that agriculture students had limited appreciation of science. This was supported by this study, in that, students disagreed that the secondary agriculture students were good in science.

Regarding the characteristics of the secondary agriculture students, Simelane's (1988) finding that males outnumbered the females while in senior secondary high school was not continued to first-year students in the university and colleges. Seemingly, the females were able to enter the academic institutions in Swaziland at the same rate as males. The ages of the majority of the first-year students in the present study were in the range (17 to 19 years old) that Simelane (1988) found, and that, also, the majority of the students resided in a rural area. Simelane (1988) reported most (67%) senior secondary agricultural students did not live in the school dormitory. A similar finding of this study showed 63% of the first-year university and college students did not live in the school dormitory.

Bentley and Rossman (1966) reported that: (1) students decided early in life in choosing a career, (2) the previous teaching and teaching-like experience contributed to the decision of choosing a teaching career, and; (3) prospect of making a potential contribution to the society, were factors which led college seniors to choose teaching as a career. This study did not support his finding as students reported deciding to have chosen a career while in senior secondary high school (ages 16 to 20 years), however, service to humanity was rated very important by students in choosing a career.

The results of the studies reported by Dlamini (1992) was concomitant with the findings of this study. The results of the two British Overseas Development evaluations reported by Dlamini, were again supported, in that, the study of agricul-

ture was "popular and interesting and brought about a favorable attitude toward agriculture." Pre-veterinary students in the southern land-grant universities (Dunkelberger, 1981), the youth in Germany (Sube, 1981) and agricultural students in Clemson University (Boyd, 1977), possessed positive attitude toward agriculture, the agriculture industry and agricultural working conditions, and, agriculture as having opportunities for advancement. Dube (1987) reported that the junior secondary agricultural students positively rated agriculture programs. However, they also believed that their friends held negative perception of their programs. The students in this study disagreed that non-agricultural students look down upon agricultural students. The students also disclosed that people viewed students in agriculture positively and the media portrayed agriculture and individuals in agriculture-related fields favorably.

The Schools' Agriculture program in Swaziland has aimed at changing the attitudes of the youth who regarded agriculture as a poverty-perpetuating activity by emphasizing small-scale commercialized agriculture. The first-year university and college students agreed that the secondary agriculture program made the learners competent in agricultural production and equipped them with agribusiness skills. These skills were geared to helping students to practice agriculture as a small-scale commercial enterprise. Additionally, Simelane (1988) highlighted that the teaching and learning in the senior secondary agriculture had been mostly achieved through practical activities. The findings of this study revealed that students agreed that the secondary agriculture students learned from the teachers' practical ways of teaching.

Teaching and learning facilities have been provided by the Ministry of Education in establishing agriculture departments in the public schools. These facilities include locally produced curriculum materials, classrooms, livestock housing, gardening areas, tools and equipment, and the first-year supply of inputs such as small livestock, seeds and fertilizers. The students agreed that the teaching materials were effective in bringing about learning, however, the materials they used in public schools were perceived as being scarce.

Salter (1987), The Regional Center for Education Statistics (1984), Dlamini (1983), Welton (1980), Harrington (1969), Reynolds (1977) and Johnson (1963) reported that college students with agriculture and farm (rural) backgrounds were influenced to enroll in their present program by agriculture teachers. Salter (1987), Johnson (1963), Sube (1981) and Welton (1980) noted that counselors had insignificant influence on students' decision to enroll in their present program. The agriculture teacher in this study was not influential, but the career guidance counselor was influential, similar with Gilmour's (1981) finding on the students' decision to enroll in their present college. Furthermore, professionals (Dlamini, 1983; Dunkelberger, 1981; Mills, 1980; and Johnson, 1963) and enrolled students in the newly pursued major (Gilmour, 1981) influenced the students' decision to switch program, and that, most of the students made the choice to enroll in their program while in high school, were supported by this study.

The advice by non-agricultural teachers was found most influential in the decision to major in agricultural education by Welton (1980). However, in this study, the non-agricultural teachers were viewed as not influential by students in their decision to attend an institution.

Dlamini (1983), Dunkelberger, et al. (1982), Dunkelberger (1981), Gilmour (1981), Sube (1981) Welton (1980) and Mills (1980) found that the majority of the students were influenced by family members in the choice of their program of study. This was supported by this research. This was, though, in contrast with Ejembi's (1988) finding, that, family relations influenced students the least in choosing their career. Also, Boyd (1977) and Venerable (1974) reported that students made their own decisions when choosing a college and a career, though consulted their parents in the process. Dlamini's (1983), Sube's (1981) and Welton's (1980) conclusion that friends were influential in choosing a career was not supported by this study.

Gilmour's (1981) contention that the high school curriculum or the subjects taken by students was an important factor in selecting a college was rated very important by students in this study. Reynold's (1977) finding that the perceived job opportunities influenced students to pursue a career was supported by the students. Fathers' occupation and the length of time students lived in dormitories were found by Bannaga (1969) to be related to students' suitability to extension work, while this study found these two characteristics having a positive but negligible association with the attitude toward the secondary agriculture components.

The location of the institution was rated unimportant by students in this study in choosing a college to attend. This was in line with Gilmour's (1981) finding that students with high scholastic

aptitude did not consider location an influential factor when deciding to attend an institution.

Cosby and Frank (1978) found that the prestige associated with a job was important to students when considering an occupation. This study found students rated prestige associated with a job to have been important in deciding to pursue their program. Further training prospect and career development were found important by Sube (1981) among German youth who were deciding on what career to pursue. Students in this study rated these elements to be very influential in their decision to enter a program leading to a career.

The strength of the target department and the academic reputation of the institution (Graham, 1990; Gilmour, 1980; and Naylor and Sanford, 1978) and the atmosphere and appearance of the campus, the quality of the faculty, and seeing television advertisements about the institution (Graham, 1984) were viewed as influential elements in choosing a college. This study supported the former, but not the latter study.

High income was perceived important by students who were choosing an undergraduate major (Koch, 1972). Students in this study rated this reason to be very important.

The academic aptitude of the students was found by Richards (1970) and The National Center for Education Statistics (1984) to be a predictor of success in a chosen major. In this study, grades in high school was rated influential by students in deciding to enter a college.

In the U.S., the reasons for students to attend college such as those found by Church and Gillingham (1988): self-improvement; social pressure; learning; self-development, career, and continued study of a favorite subject were not the reasons that the students provided in this study. Furthermore, Murray, et al. (1990) showed that the reasons for attending a higher institution were career-related, while Astin, et al. (1988) found jobs and money were reasons for students in attending university. Johnson and Troy (1981) revealed students' reasons were to obtain a better job and prepare for graduate or professional school and to meet new people. These three latter studies did not present findings similar to this study. The most influential reasons students provided for attending a tertiary institution were: subjects taken in high school, grades in high school, advice by a professional in the desired field, advice by a career guidance counselor, and the reputation of the target department.

The reasons perceived most important by students in this study for pursuing their present program were supported by the findings found among American students: Church and Gillingham's (1988) self-improvement and career reasons, Astin and others' (1988) jobs and money reasons, and Troy's (1981) obtaining a better job and preparing for graduate or professional school.

Recommendations

Based on the findings of the study, the following recommendations were formulated:

1. The findings of this study confirmed that the students tracked to study agriculture in secondary schools were those who were viewed not generally intelligent or advanced in science, yet, agriculture is weighted as a science subject when students are considered by the tertiary institutions. If only the students considered "not advanced" in science are continually being channeled to enroll in agriculture in secondary schools, the future agricultural professionals might not be able to tackle the scientific and technological advancements of Swaziland. Though already practiced in some schools, a need for secondary agriculture students to supplement their agriculture classes with other science subjects is recommended. If agriculture is taken concurrently with science subjects, enhanced learning should take place in both subject areas.
2. Agriculture was viewed as a subject that demands more work from students. However, students in agriculture also enjoy the benefit of their hard work such as harvesting vegetables and crops from their garden plots and taking home the reared small livestock. Rewarding students for their hard work must continue, to motivate students to study agriculture and to enhance their perceptions of careers in the agricultural sciences.
3. Students perceived agriculture in public schools as not being aimed at developing leadership skills. Students, teachers, teacher educators and people concerned with students' affairs need to be consulted on activities students in agriculture can do to enhance their leadership potential. A view of what other countries do to enhance the leadership potential of their secondary agriculture students might help in formulating a model for Swaziland.
4. Though this study did not provide the students with a comprehensive definition of a problem-solving approach to learning, they have indicated that this method has not been fully used.

Secondary agriculture teachers need to be made aware of the potential use of this teaching method to be able to respond to the varied learning needs of students.

5. The Swaziland radio was viewed positively in delivering agricultural news. However, there was much to be desired from Swaziland TV as indicated by the students. Finding the quantity and quality of agricultural news Swaziland TV broadcasts can be an exercise that students can do and can be incorporated in the syllabus content of the secondary agriculture program and in teacher education program.
6. Students who were furthering their studies in agriculture in both the university and colleges have more positive attitude toward the secondary agriculture components than those who were not. Offering agriculture as a course in the teacher training colleges, especially, should continue, to help maintain a positive image of agriculture teaching among college students and the students these teachers-to-be will be teaching.
7. The majority of the students indicated having not been recruited in their present college. These finding raises questions that need to be answered by professionals involve in the recruitment of students at the college level. Do tertiary institutions exercise fully their recruitment practices? If not, why not?
8. No component of the secondary agriculture program was highly rated by the first-year university and college students. This prompts the people involved in the program to realize that there is still more to do to reach the maximum potential of the program.

Need for Further Study

Further studies and activities were envisioned as a result of this study:

1. Non-university students held more positive attitude than university students toward secondary agriculture teachers, and how people viewed students in agriculture and how the media portrayed agriculture and individuals in agriculture-related fields. Why the university students did not regard highly the secondary agriculture components, and indeed the profession which is pursued by their fellow students could be addressed by a more in-depth case study of this group.
2. Agricultural education students had only slightly positive attitude toward the components of the profession they were pursuing. Why did this group not positively perceive their future profession and what might be their reasons for being in this program? More information elicited from this group could detect the motivations of the future professionals. The low but positive attitude toward the components of the secondary agriculture profession might also be due to other factors such as having been "burned out" while in the secondary agriculture program, as the students have reported agriculture as a subject that required hard work. Another possibility is that, students might have not been "kindled" at the first place even if they were in the program. Students might have been in the agricultural education program only because they qualified to enter that program, and their more highly prioritized program could not accommodate them. These are only some of the problems that agricultural education researchers can use as guides to further investigating these issues.
3. The specific characteristics of the students that encouraged them to pursue certain careers were not investigated in this study. If the relationship between the characteristics of students and the factors helpful in choosing their career could be determined, students could be more appropriately advised when confronted with choosing a career.
4. A need exists to do a longitudinal study to follow-up on the population used in this study to ascertain whether the attitude remain unchanged throughout an interval of years. The profession aims at improving its image and it would be helpful to know if that is being achieved as time advances and as students advance through tertiary education.
5. Students indicated that the subjects they have taken in high school were influential in choosing their college. The curriculum background of the students in high school and the kinds of programs students pursue in college could be investigated. This would generate useful information that could be used for guidance and counseling in secondary schools.
6. Students indicated that the advice they received from guidance counselors was important in their decision to attend a college. However, the frequency with which they get advice was only 1 to 2 times during their senior year. School administrators need to be surveyed on whether there is a lack of guidance and counseling in the senior secondary schools which the students also indicated was the time they make their crucial decisions to attend a particular college for a certain program.
7. A large number of students could not provide information on the number of hectares of land

their families were allocated by the chief of their areas. A study to determine the knowledge students have of traditional and vital agricultural information could be conducted to guide the teachers from primary to university level about what to incorporate in their agriculture curriculum.

8. Swaziland students' reasons for going to college needs to be ascertained. Swazi students' reasons were found to be different from the reasons found among American students. Other reasons not identified in this study need to be elicited among college students population. This is to guide educators and policy makers on educating secondary and college students on the expectations versus reality after college.
9. Other reasons must exist and need to be studied to determine why more males drop out between completing secondary education and entering college.

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Summary of Research Series

Agriculture plays a leading role in the economy of Swaziland. To maintain its prominence, agriculture must be made attractive to school leavers and should have greater emphasis beginning at the primary school level. The purpose of this study was to describe and explain the attitude of the first-year university and teacher training college students toward the secondary level agriculture program in Swaziland.

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Research has been an important function of the Department of Agricultural Education since it was established in 1917. Research conducted by the Department has generally been in the form of graduate theses, staff studies, and funded research. It is the purpose of this series to make useful knowledge from such research available to practitioners in the profession. Individuals desiring additional information on this topic should examine the references cited.

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SR 75 1994